OF THE  
BIOLOGICAL SOCIETY OF WASHINGTON*HIRSTIONYSSUS OBSOLETUS*, A NEW MESOSTIG-  
MATIC MITE FROM SMALL MAMMALS OF THE  
WESTERN UNITED STATES (ACARINA)

BY E. W. JAMESON, JR.

*Division of Zoology, University of California,  
Davis*

In this paper is described a new species of *Hirstionyssus* Fonseca from western United States. *Ichoronyssus hubbardi* Jameson and *Liponyssus occidentalis* Ewing are allocated to *Hirstionyssus*, and a key to the females of the Nearctic species is given. The relationship of *Neoichoronyssus* Fonseca, 1941 and *Hirtionyssus* Fonseca, 1948 is discussed.

Fonseca specified (1948: 266) that the males of *Hirstionyssus* possess an undivided holovenral plate. Although the male of *Ichoronyssus hubbardi* has a separate anal plate, the coxal spurs, the genito-ventral plate with a single pair of setae, and the general facies indicate that *hubbardi* is closely allied to the species of *Hirstionyssus*. A cotype of *Liponyssus occidentalis* Ewing likewise has the above characters, and it also belongs to *Hirstionyssus*; *occidentalis* is closely related to the genotype of *Hirstionyssus*, *Dermanyssus arcuatus* Koch, 1839.

Key to the females of Nearctic species of *Hirstionyssus*

- A. Some of the coxal spurs bifid and some setigerous ..... B  
Coxal spurs acutely pointed, rounded, or truncate, but not bifid  
and none setigerous ..... C
- B. Peritreme extending to coxa I; coxa I with two spurs; genito-  
ventral plate narrowed posteriorly  
*dentipes* (Strandtmann & Eads)  
Peritreme not extending forward of coxa III; coxa I with one  
spur; genito-ventral plate broadly rounded posteriorly  
*hubbardi* (Jameson)
- C. Coxa II with a conspicuous caudo-dorsal spur or knob  
*geomydis* (Keegan)
- Coxa II rounded on the caudo-dorsal margin ..... D
- D. Tarsus II with two stout ventral spines or setae; genito-ventral  
plate separated from the anal plate by a distance equal to at  
least half the length of the latter ..... E  
Tarsus II without modified setae; genito-ventral plate separated  
from the anal plate by a distance not greater than the length  
of the anus (except in engorged specimens); ventral coxal spurs  
much reduced and rounded ..... *obsoletus*, n. sp.

- E. Length of the sternal plate (along the median line) about one-third the distance between the first pair of sternal setae  
*occidentalis* (Ewing)  
 Length of the sternal plate (along the median line) one-half to two-thirds the distance between the first pair of sternal setae ----- F
- F. Ventral spurs on coxae II and III blunt in outline  
*occidentalis* (Ewing)  
 Ventral spurs on coxae II and III acutely pointed -- *carnifex* (Koch)

***Hirstionyssus obsoletus*, n. sp.**

*Dorsum* (fig. 1, D): Dorsal plate in one piece, almost completely covering the dorsum, with slightly undulating anterior margin, rounded posteriorly; armed with about 29 pairs of slender setae, tending to be heavier anteriorly. A pair of slit-like pores near the anterior margin, and 13 pairs of circular pores placed as illustrated.

Peritreme extending from coxa IV to coxa I; peritremalia extending posteriorly about twice the diameter of the stigma, and apparently connected to coxa IV.

*Venter* (fig. 1, A): Sternal plate about four times as wide as long, concave caudally, bearing three pairs of slender setae, each setae slightly longer than the length of the sternal plate. Genito-ventral plate long, rounded caudally, bearing a single pair of setae. Genito-ventral plate separated from the anal plate by a distance not greater than the length of the anus in unengorged specimens. Anal plate ovoid; adanal setae slightly smaller than the postanal seta. Soft parts of venter with about 19 pairs of slender setae.

*Legs*: Coxa I with a ventral and a marginal seta. Coxa II with two slender setae on the margin, an acute cephalo-dorsal spur, and a small, blunt ventral spur. Coxa III with a marginal and a submarginal seta, and two small, ventral spurs, the more mesal being rounded. Coxa IV with a submarginal seta, and no ventral marginal spur; margin fimbriated (fig. 1, C). Tarsus II without modified setae.

*Gnathosoma* (fig. 1, B): Chelicerae shear-like, fixed arm slightly longer than the movable arm. Four pairs of hypostomal setae, relative size and position as illustrated. Hypostomal teeth alternately and in two rows at the base, converging to one row distally; about 15 teeth in all. Epistome narrow distally, apex with 2-4 teeth.

*Types*: Holotype female and 22 paratype females; holotype and 10 paratypes deposited with the U. S. National Museum.

*Collection data*: California: Plumas County, 4 miles east of Quincy; 10 March 1949; from a long-tailed shrew, *Sorex trowbridgii* Baird.

The "true host" appears to be *Sorex trowbridgii*, but this mite occurs on the shrew-mole (*Neurotrichus gibbsii* (Baird)), the deer mouse (*Peromyscus maniculatus* (Wagner)), and the red-backed vole (*Clethrionomys californicus* (Merriam)). The records from rodents suggest a poorly developed host specificity for *H. obsoletus*. However, these mice are parasitized by other species of *Hirstionyssus*, and specimens of *obsoletus* on rodents may be strays from insectivores.

The relationship of *Neoichoronyssus* Fonseca, 1941 and *Hirstionyssus* Fonseca, 1948.

The genus *Neoichoronyssus* was erected for *Liponyssus wernecki* Fonseca, 1935, a parasite of opossums (Didelphiidae). *Neoichoronyssus*

was characterized (Fonseca, *op. cit.*: 269) as possessing two pairs of setae on the sternal plate, the genital plate of the female pointed posteriorly and bearing a single pair of setae, and a ventral spine on coxa I. Specimens of *N. wernecki* taken from *Didelphis virginiana* (Greenwood County, Kansas) agree quite well with the description except with regard to the sternal setae. In one specimen (cleared in potassium hydroxide) the projections of the sternal plate which normally bear the third pair of setae are barely perceptible; and in other specimens of the same series (cleared in polyvinyl alcohol) the sternal plate bears three pairs of setae. There appears to be individual variation, or a difference due to the method of preparation. In other respects *N. wernecki* possesses the generic characters of *Hirstionyssus*. The synonymy of *Hirstionyssus* under *Neoichoronyssus* is not urged here in view of the likelihood of a still earlier generic name for this group of species.

#### ACKNOWLEDGMENTS

I wish to thank Dr. E. W. Baker for the loan of a cotype of *Liponyssus occidentalis* Ewing; Dr. R. W. Strandtmann for checking the key; Dr C. D. Radford for the loan of a paratype of *Hirstionyssus cynomys* (Radford); and Dr. Claude W. Hibbard for specimens of *Neoichoronyssus wernecki* (Fonseca).

#### LITERATURE CITED

- Fonseca, Flavio da 1948. A monograph of the genera and species of Macronyssidae Oudemans, 1936 (synom.: Liponyssidae Vitzthum, 1931) (Acari). Proc. Zool. Soc. London 118. 249-334.

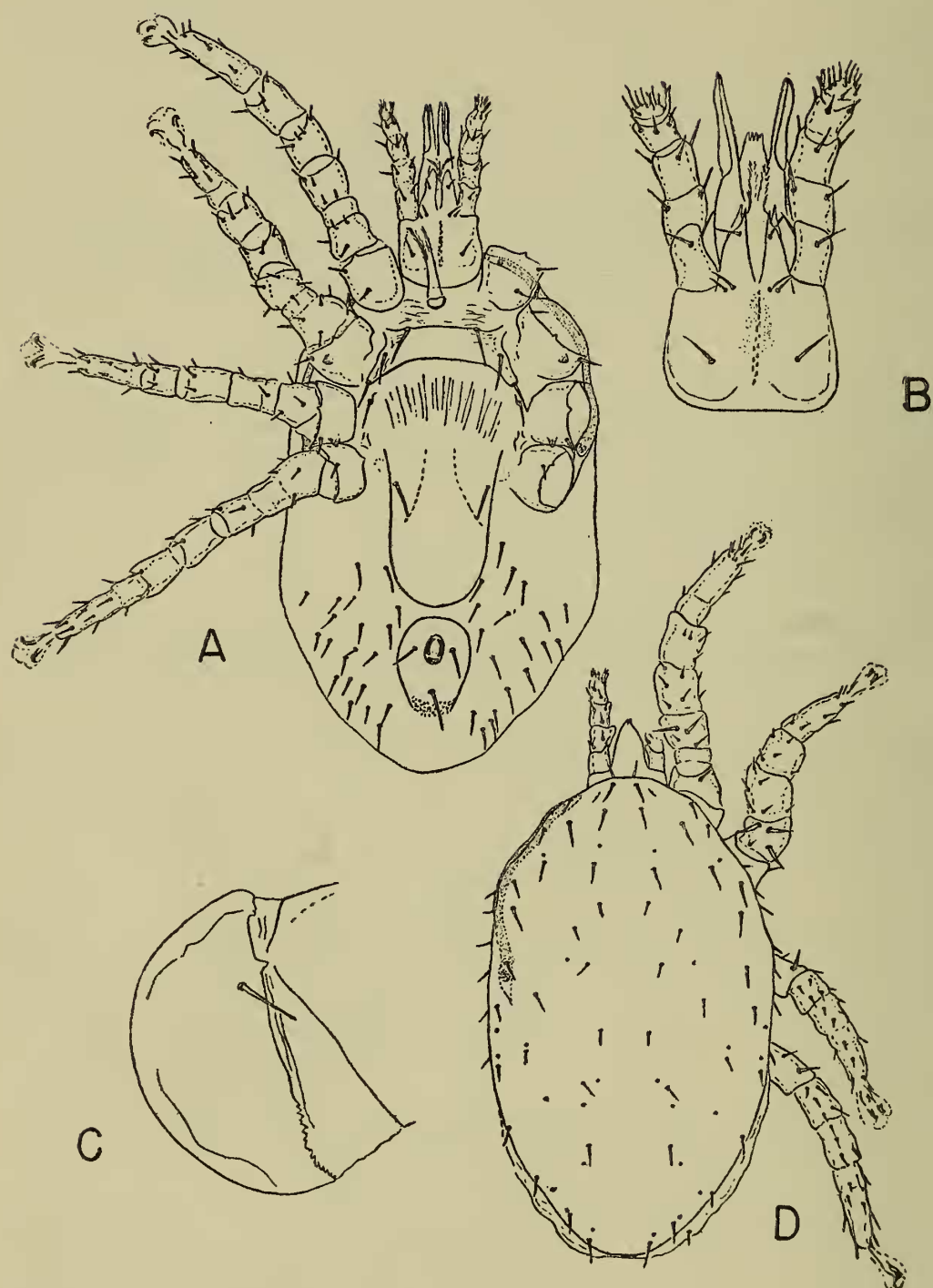


Plate III. Female of *Hirstionyssus obsoletus*, n. sp. A, ventral; B, gnathosoma; C, coxa IV (ventral); D, dorsal.